

# Getting it Right from the Start...that's Optimization. Machine Option



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## Feel The Difference: Too Much is not always good.

The heart of a Central Housekeeping Vacuum System is a Vacuum Producer (Exhauster) of Single or Multi-Stages, Side Channels or Positive Displacement (Roots) Construction.

Each type of Vacuum Producer has its unique performance characteristics which has an influence on the performance of a Central Housekeeping Vacuum System.

It is important to understand that each Central System should be designed to produce the exact vacuum necessary to perform the task you need to accomplish. You do not pay for excess vacuum which others claim you may need.

### Too much vacuum is as bad as too little.

Excess vacuum might increase initial purchase price, operating cost (energy cost), wear in the pipe lines and separator because of higher velocity produced.

It tires workers (cleaners) out quicker, reduces productivity because of the difficulty in moving tools.

### Positive Displacement (Roots) Construction

This type of Construction is usually able to produce the highest achievable vacuum level at its inlet among those mentioned above.

This particular characteristics of it is also the single most misleading factor that lead many to believe it is the perfect choice.

Most believe that the work performed by vacuum cleaning is accomplished by vacuum, not flow.

### This is wrong!

Room air exert a pressure of at least 14.7 pounds per square inch at sea level. Since reducing the absolute pressure inside a vacuum cleaning hose creates a pressure differential, the air in the room will rush toward the low-absolute pressure area and into the hose carrying with it any nearby solid objects (particles). Dirt is therefore pushed through the vacuum system, not pulled.

Hence, while a very high ultimate achievable vacuum level is possible at the inlet of the vacuum exhauster is a good characteristics, it is the ability to maintain a relative constant vacuum level as more operators come on line or off line that is critical for a multiple users Central Housekeeping Vacuum System.

Therefore, Positive Displacement (Roots) Type Vacuum Producer can be a possible option, if it usage is limited to Central Housekeeping Vacuum System that have 1 to 3 users only.

This is because the characteristics of its performance curve clearly show that vacuum level increases with a reducing no of users. In other words, the vacuum at the Point of Cleaning will get stronger and stronger leading to a point whereby it become far too strong for cleaning task to be performed.

Please refer to Figure A.

## Side Channels Construction

This type of machine shows a more gradual decline curve as per Figure A. Hence, it is more suitable for Central Housekeeping Vacuum System / Package that serve a bigger number of users. In practice package fitted with such vacuum producer can be used to support system up to 10 users quite comfortably.

## Single or Multi-Stages Machine Construction

This type of vacuum producer maintain a virtually constant suction across its capacity range. Hence, it is very suitable for big scale systems that support many users since the vacuum level at the Point of Use will remain relatively constant as and when user come on or off line.

Figure A

